FIG. 1

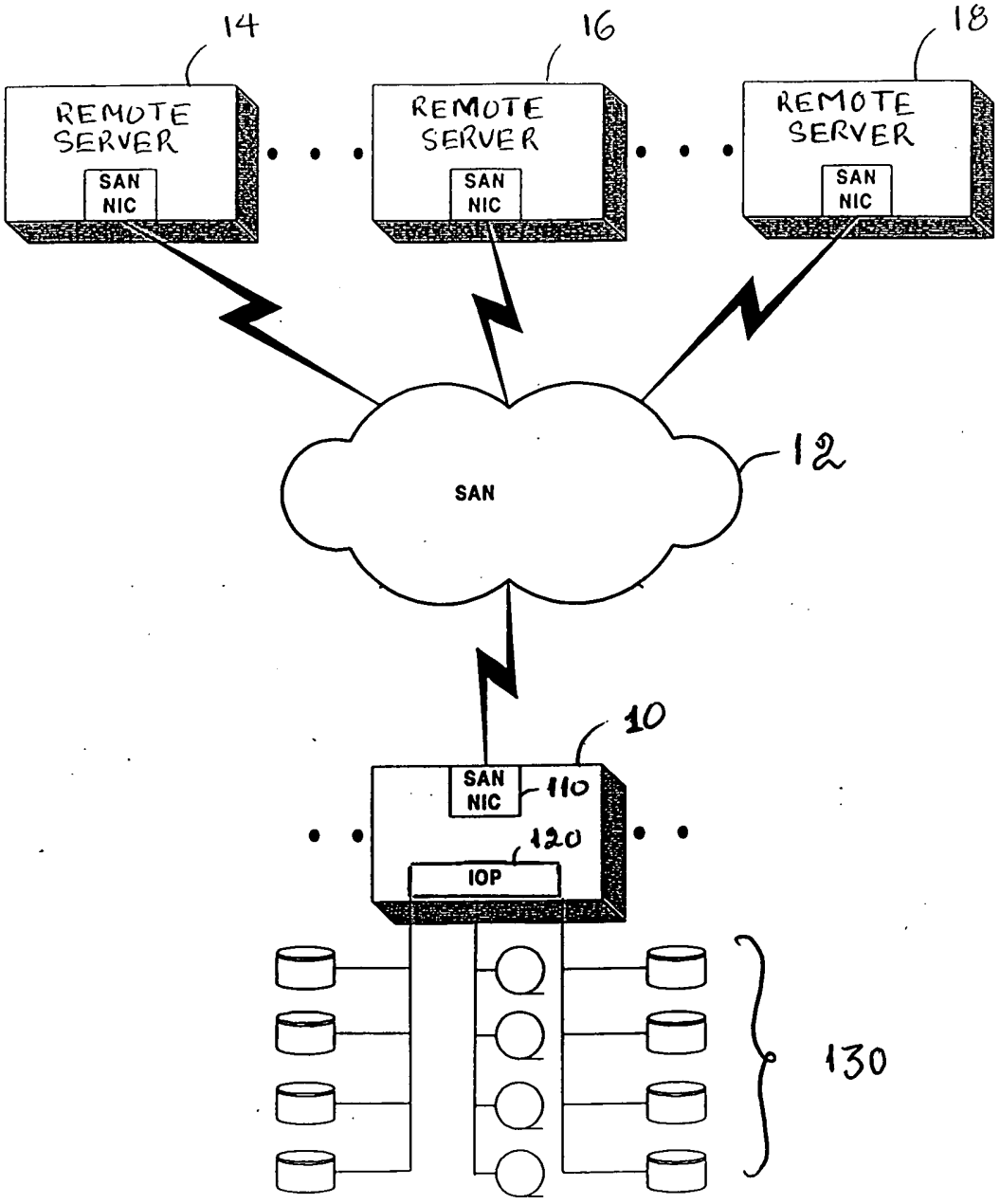
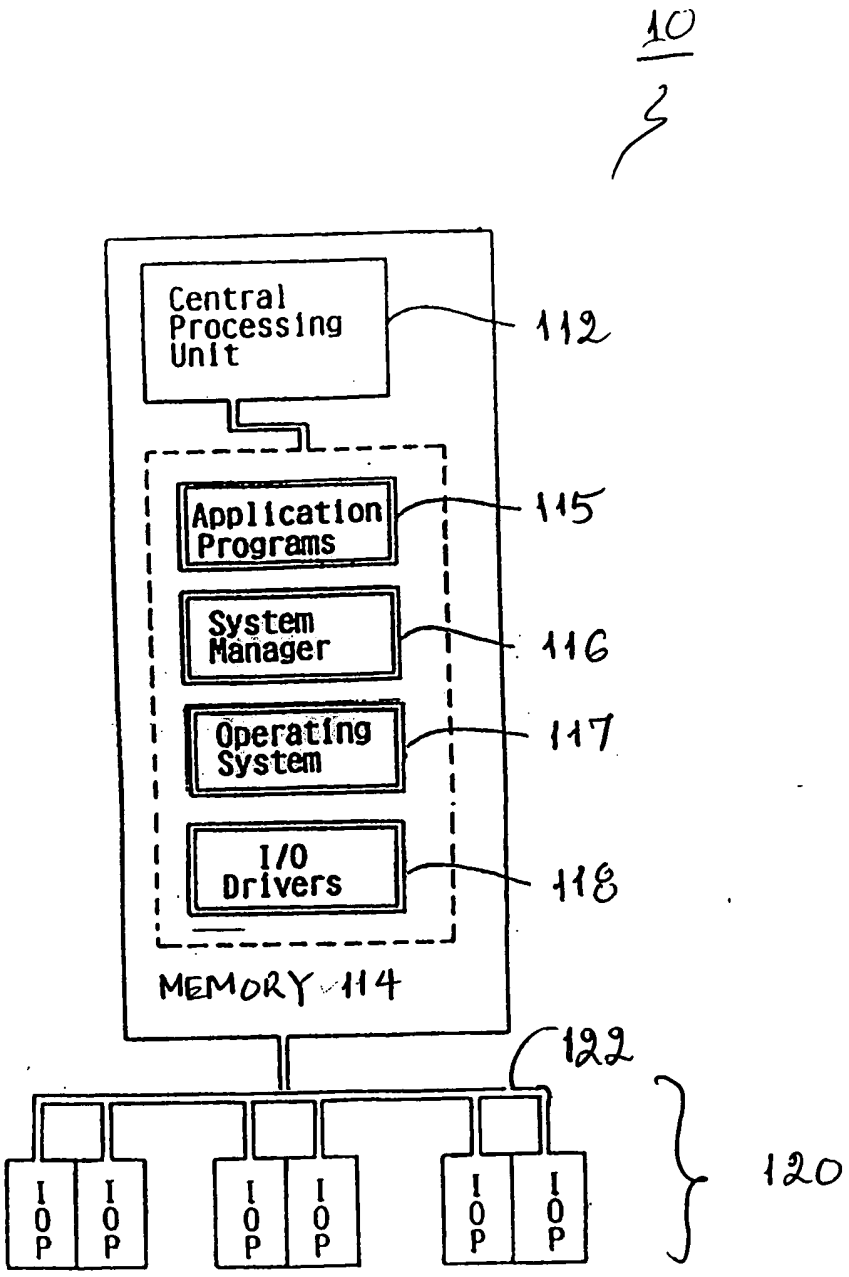

14
16
18
REMOTE SERVER
SAN NIC
REMOTE SERVER
SAN NIC
REMOTE SERVER
SAN NIC
12
SAN
10
SAN NIC
110
120
IOP
130

FIG. 2


10
Central Processing Unit
112
Application Programs
115
System Manager
116
Operating System
117
I/O Drivers
118
MEMORY 114
122
IOP
IOP
IOP
IOP
IOP
IOP
120

60f22f:9825f60

FIG. 3

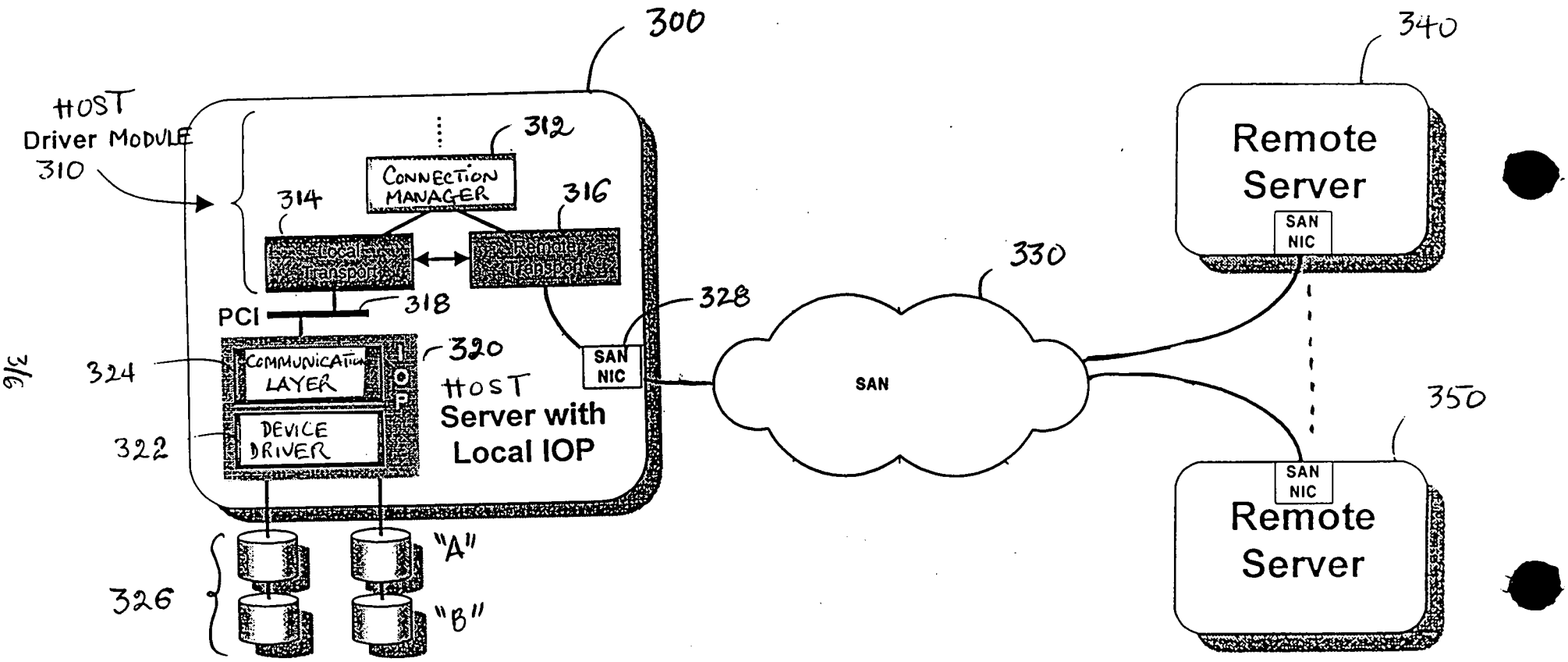


FIG. 4

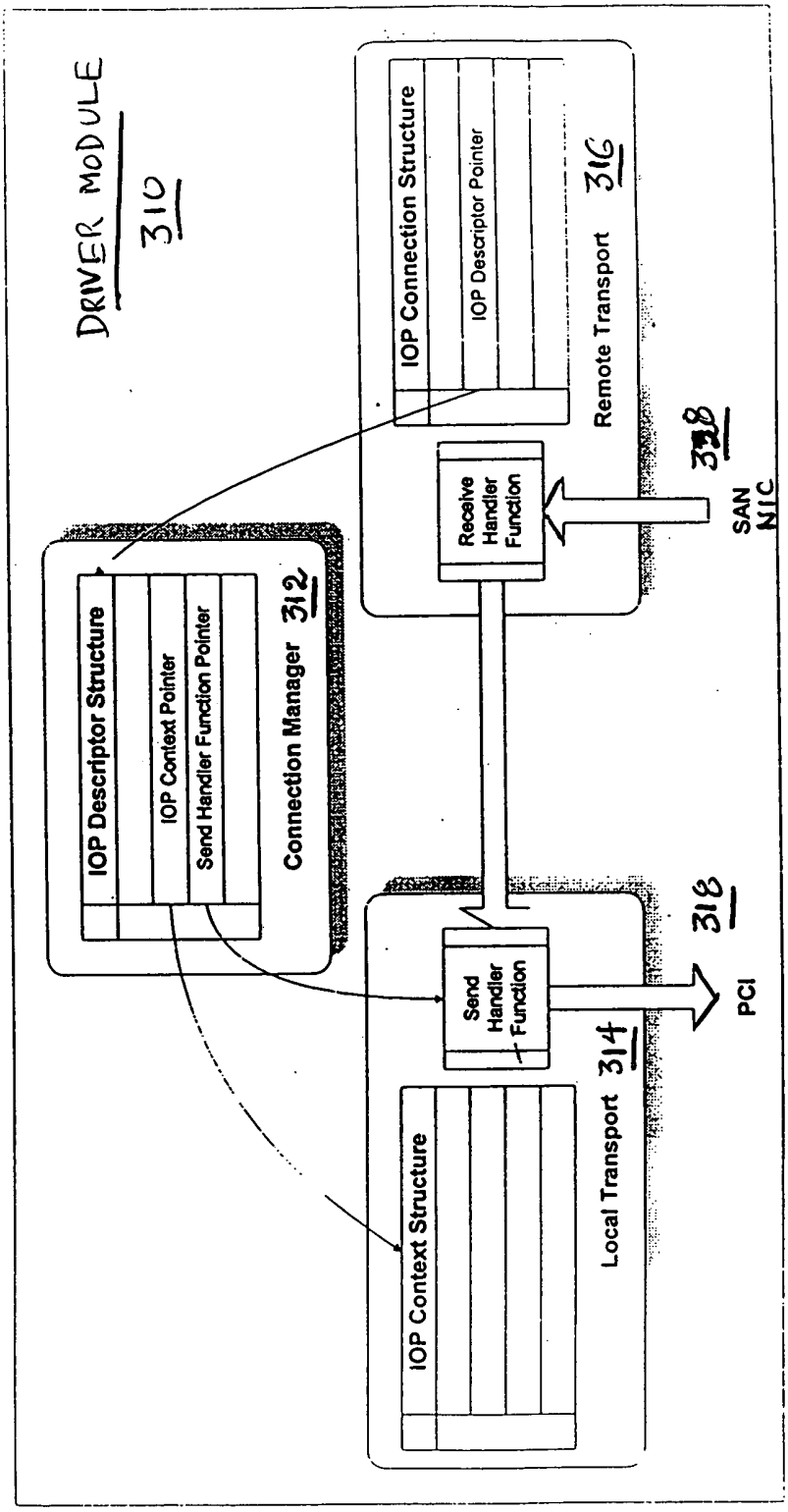

DRIVER MODULE
310
IOP Descriptor Structure
IOP Context Pointer
Send Handler Function Pointer
Connection Manager
312
IOP Connection Structure
IOP Descriptor Pointer
Remote Transport
316
Receive Handler Function
328
SAN NIC
Send Handler Function
318
PCI
314
IOP Context Structure
Local Transport

FIG. 5

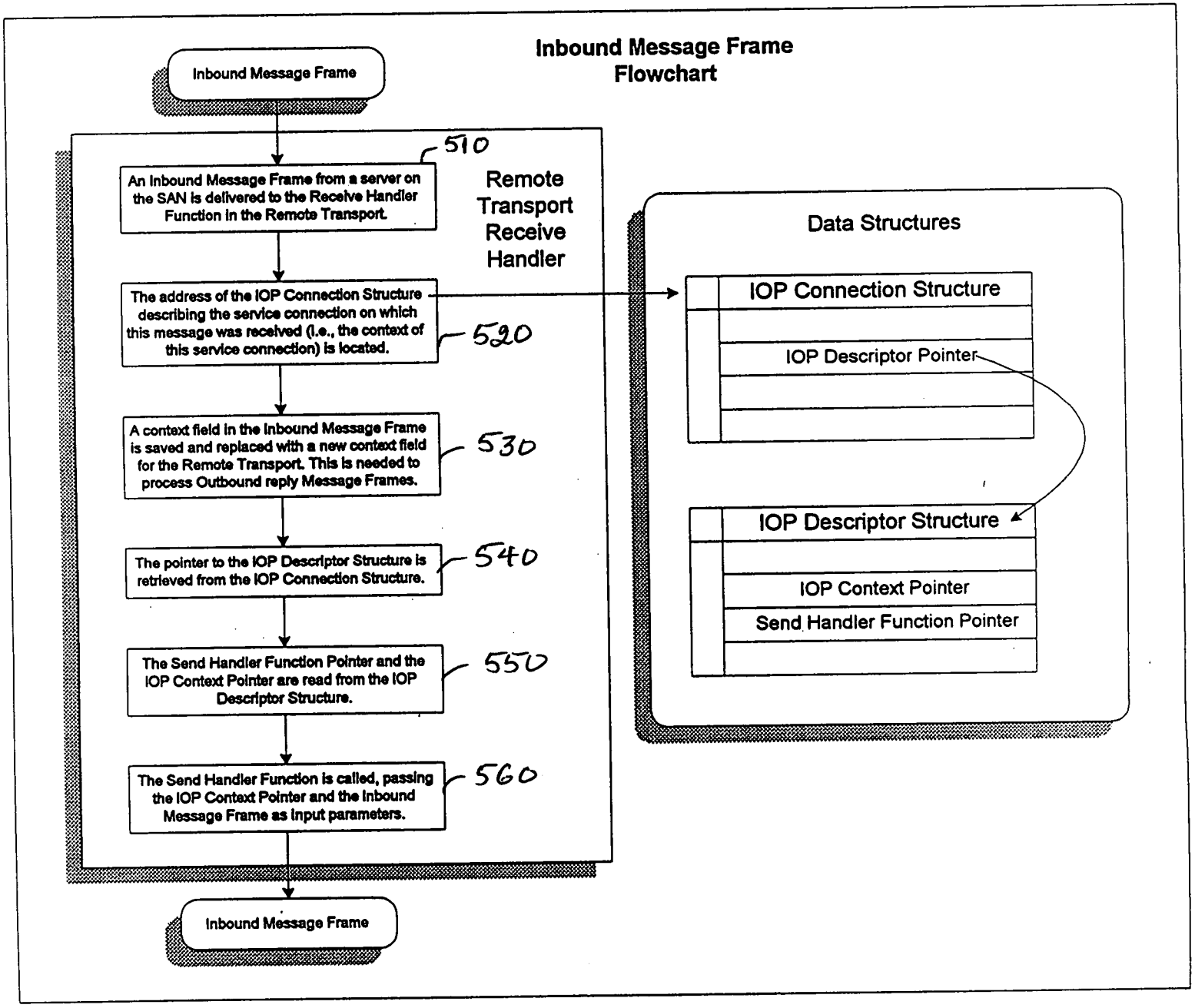
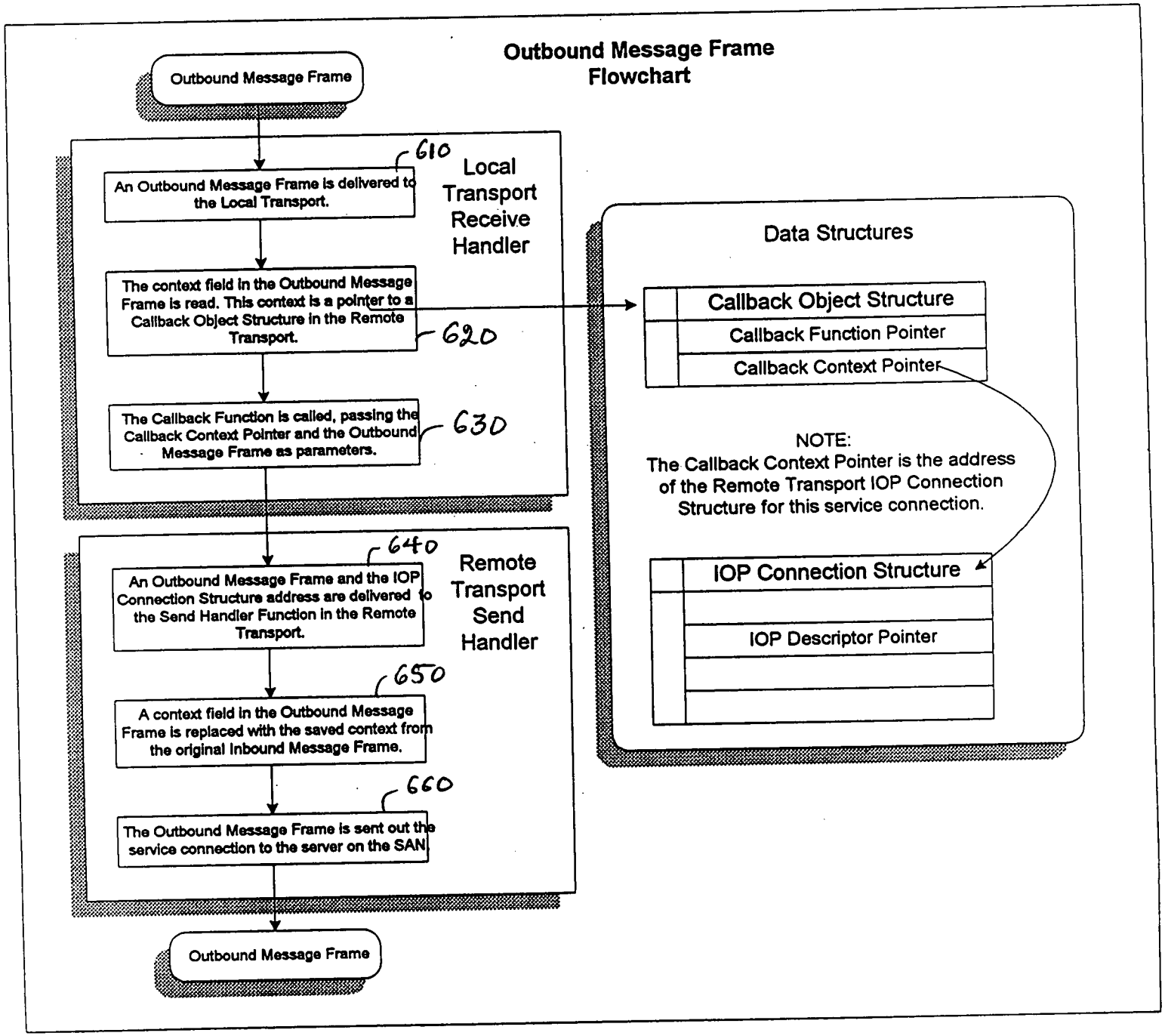

Inbound Message Frame Flowchart
Inbound Message Frame
510
An Inbound Message Frame from a server on the SAN is delivered to the Receive Handler Function in the Remote Transport.
Remote Transport Receive Handler
The address of the IOP Connection Structure describing the service connection on which this message was received (i.e., the context of this service connection) is located.
520
A context field in the Inbound Message Frame is saved and replaced with a new context field for the Remote Transport. This is needed to process Outbound reply Message Frames.
530
The pointer to the IOP Descriptor Structure is retrieved from the IOP Connection Structure.
540
The Send Handler Function Pointer and the IOP Context Pointer are read from the IOP Descriptor Structure.
550
The Send Handler Function is called, passing the IOP Context Pointer and the Inbound Message Frame as input parameters.
560
Inbound Message Frame
Data Structures
IOP Connection Structure
IOP Descriptor Pointer
IOP Descriptor Structure
IOP Context Pointer
Send Handler Function Pointer

FIG. 6a


Outbound Message Frame Flowchart
Outbound Message Frame
610
An Outbound Message Frame is delivered to the Local Transport.
Local Transport Receive Handler
The context field in the Outbound Message Frame is read. This context is a pointer to a Callback Object Structure in the Remote Transport.
620
The Callback Function is called, passing the Callback Context Pointer and the Outbound Message Frame as parameters.
630
640
An Outbound Message Frame and the IOP Connection Structure address are delivered to the Send Handler Function in the Remote Transport.
Remote Transport Send Handler
650
A context field in the Outbound Message Frame is replaced with the saved context from the original Inbound Message Frame.
660
The Outbound Message Frame is sent out the service connection to the server on the SAN.
Outbound Message Frame
Data Structures
Callback Object Structure
Callback Function Pointer
Callback Context Pointer
NOTE:
The Callback Context Pointer is the address of the Remote Transport IOP Connection Structure for this service connection.
IOP Connection Structure
IOP Descriptor Pointer